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New Jersey

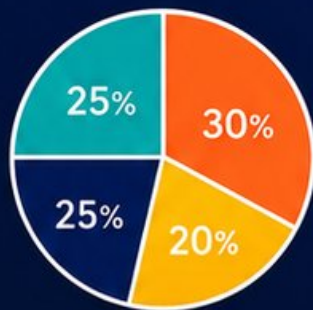
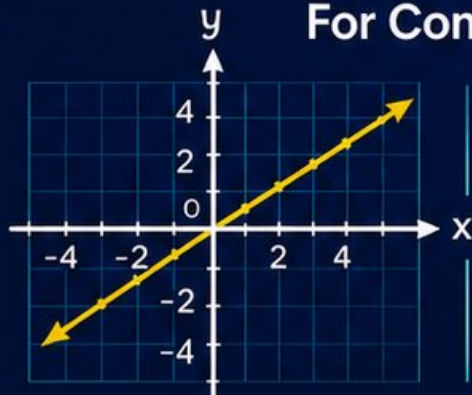
NJSLA

GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

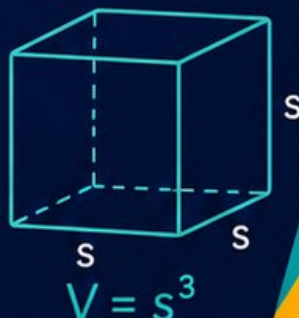


$$y = mx + b$$

$$2x - 3y = 6$$

$$\sqrt{x^2 + y^2}$$

$$A = bh$$



4 PRINTED TESTS



2 ONLINE TESTS



Use these **two additional online practice tests** for extra review after the printed tests in this book.



4 New Jersey NJSLA Grade 8 Math Practice Tests

Four NJSLA Rounds for Equations, Functions, Geometry, and Data



Four complete 40-question Grade 8 NJSLA practice rounds with real numbers, exponents, scientific notation, equations, functions, transformations, geometry, data analysis, probability, answer keys, and clear explanations for every item.

Jay Daie and Reza Nazari



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Welcome, New Jersey Grade 8 Problem Solver!

Four focused rounds for sharper NJSLA math thinking

This book gives you four full Grade 8 NJSLA math practice tests. Each round is built to help you recognize structure, reason with real numbers and exponents, analyze linear relationships, connect equations with graphs, and explain your thinking with care.

Your New Jersey Practice Promise

I will read every question carefully, choose a strategy that fits, write enough work to prove my answer, and use corrections as training for the next test.

Read

Model

Verify

How to Use This Book

A four-session plan for confident Grade 8 review

1. **Warm up with the review pages.** Notice the big ideas before starting the tests.
2. **Complete one test at a time.** Treat each 40-question round like a real practice session.
3. **Show your reasoning.** Jot an exponent rule, equation, graph, transformation, diagram, or quick estimate when it helps.
4. **Correct actively.** Rework missed items before reading the explanation.
5. **Choose the next target.** After each test, name one skill and one habit to improve.

New Jersey review rhythm: Work a test, score it, study your misses, then come back ready for the next round with one clear goal.



What Is Inside?

Four NJSLA tests, 160 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 3–4	Functions, systems, transformations, geometry, data analysis, and multi-step problem solving.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Grade 8 success means recognizing which idea is being tested even when the next question changes format.



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For more practice
& answers

Table of Contents

★ Practice Test 1	_____	15
★ Practice Test 2	_____	34
★ Practice Test 3	_____	52
★ Practice Test 4	_____	68
Practice Test Answer Keys	_____	83
Practice Test Answers and Explanations	_____	86

1) Solve for n : $-2(n - 4) = 10$

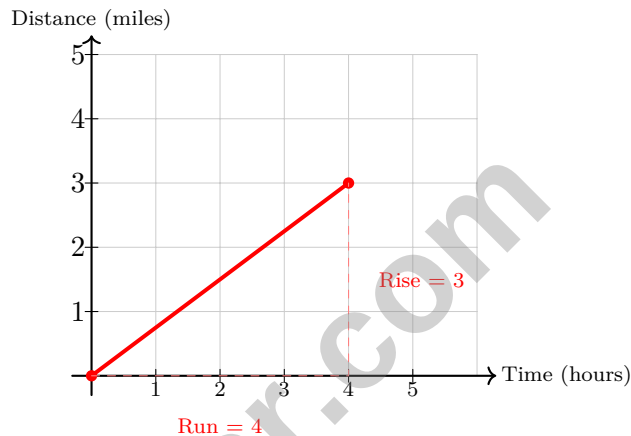
☐ A. $n = 1$

☐ C. $n = 9$

☐ B. $n = -9$

☐ D. $n = -1$

2) A car travels at a constant speed. The graph shows its distance from the start over time.



What is the slope (rate of change) of the car's distance?

☐ A. 1 mile per hour

☐ C. $\frac{3}{4}$ miles per hour

☐ B. $\frac{4}{3}$ miles per hour

☐ D. 4 miles per hour

3) Sarah is 5 years older than Tom. In 5 years, the sum of their ages will be 45. How old is Tom now?

☐ A. 12

☐ C. 15

☐ B. 18

☐ D. 20



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4) A drawer has 8 distinct socks. If you pick 2 socks one at a time (without replacement) for a pair, in how many ways can this be done if order matters?

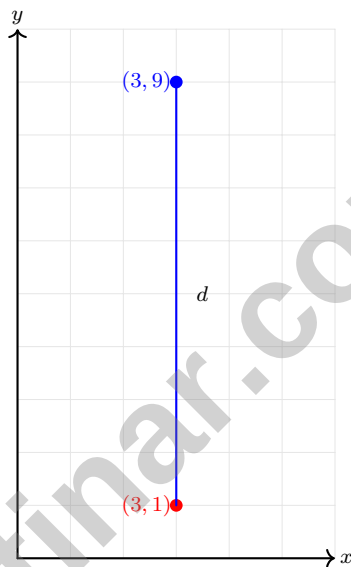
☐ A. $8 + 7 = 15$

☐ B. $8 \times 7 = 56$

☐ C. $\binom{8}{2} = 28$

☐ D. $8^2 = 64$

5) A coordinate plane shows two points: $(3, 1)$ and $(3, 9)$. What is the distance between them?



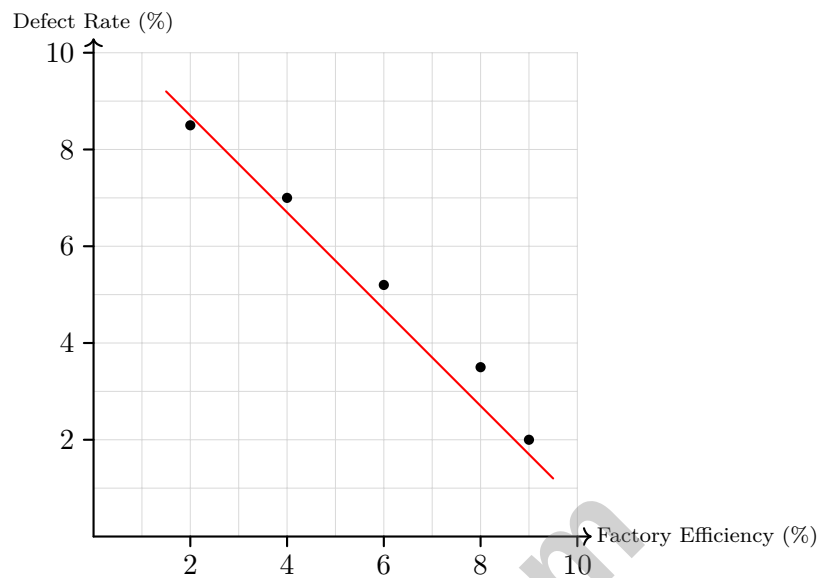
☐ A. 8

☐ B. 6

☐ C. $\sqrt{63}$

☐ D. 12





6)

A factory tracks production efficiency versus defect rate. What does the strong negative slope tell you?

- ☐ A. Higher efficiency causes fewer defects ☐ C. Defects are always zero when efficiency is high
☐ B. As efficiency increases, the defect rate tends to decrease substantially ☐ D. The relationship is unrelated

7) A cube is dilated by a scale factor of 2. If the original cube has volume 27 cm^3 , what is the volume of the dilated cube?

- ☐ A. 54 cm^3 ☐ C. 216 cm^3
☐ B. 108 cm^3 ☐ D. 81 cm^3



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1) A cone has a volume of 314 cm^3 and height of 12 cm. What is its radius? (Use $\pi \approx 3.14$.)

☐ A. 3 cm

☐ C. 5 cm

☐ B. 4 cm

☐ D. 6 cm

2) A cyclist travels at a constant speed. After 1.5 hours, they have traveled 22.5 miles. After 3 hours, they have traveled 45 miles. What is the slope (speed in mph)?

☐ A. 15 mph

☐ C. 30 mph

☐ B. 22.5 mph

☐ D. 45 mph

3) Tickets cost \$4 for children and \$7 for adults. The theater sold 200 tickets for a total of \$1,100. How many children's tickets were sold?

☐ A. 100

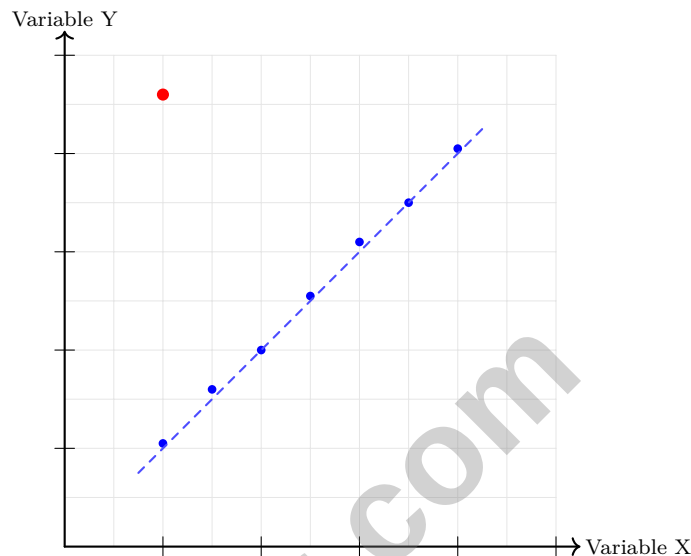
☐ C. 50

☐ B. 150

☐ D. 120



- 4) Two scatter plots compare the same dataset. Plot A omits one extreme outlier; Plot B includes it. How do you expect the correlation coefficient to change when the outlier is added?



- ☐ A. Increase dramatically ☐ C. Remain unchanged
☐ B. Decrease (become weaker) ☐ D. Become undefined
- 5) A survey of 240 shoppers by age group and purchase type:

	Apparel	Electronics	Total
Teen	48	32	80
Adult	72	88	160
Total	120	120	240

What is the joint relative frequency of teens buying electronics, as a percentage?

- ☐ A. $\approx 13\%$ ☐ C. $\approx 33\%$
☐ B. $\approx 27\%$ ☐ D. $\approx 40\%$



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1) The value of $\sqrt{42.5}$ is closest to?

☐ A. 6.8

☐ C. 6.7

☐ B. 6.6

☐ D. 6.5

2) If a linear function has a constant rate of change of 3, and passes through $(0, 5)$, write the equation in the form $y = mx + b$.

3) Simplify $(2a)^3$.

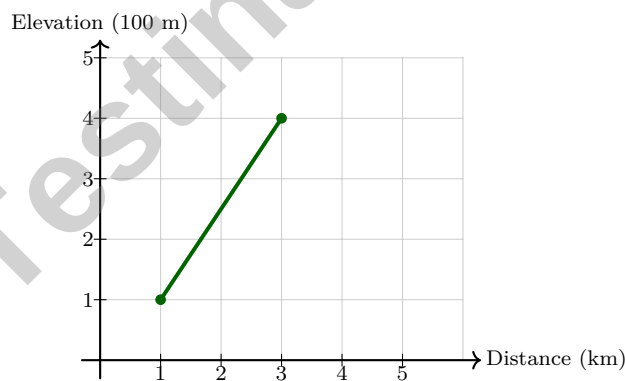
☐ A. $2a^3$

☐ C. $6a$

☐ B. $2a \cdot 3$

☐ D. $8a^3$

4) The graph shows elevation change during a hike.



What is the slope of the line?

☐ A. $\frac{3}{4}$

☐ C. $\frac{3}{2}$

☐ B. $\frac{2}{3}$

☐ D. 2



- 5) A vending machine contains 32 coins (dimes and quarters). The total value is \$5.30. How many dimes are there?
- ☐ A. 8 ☐ C. 14
☐ B. 12 ☐ D. 18
- 6) If $g(x) = x + 7$, what is $g(2)$?
- ☐ A. 5 ☐ C. 10
☐ B. 9 ☐ D. 14
- 7) What are the coordinates of the image of point $(5, 0)$ after a reflection across the line $y = -x$?
- ☐ A. $(0, -5)$ ☐ C. $(5, 0)$
☐ B. $(-5, 0)$ ☐ D. $(0, 5)$
- 8) A transversal cuts two parallel lines. If angle A is 73° , find the sum of angle A and its co-interior angle.
- ☐ A. 146° ☐ C. 253°
☐ B. 180° ☐ D. 360°
- 9) A diagonal walkway connects two opposite corners of a rectangular plaza that is 30 m by 40 m. How long is the walkway?
- ☐ A. 35 m ☐ C. 70 m
☐ B. 50 m ☐ D. 1200 m



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New Jersey NJSLA Grade 8 Practice Test Answer Keys**How to use this section with a Grade 8 student:**

1. check the answer first and circle any item that needs another look
2. retry the problem with fresh work before reading the explanation
3. write one short lesson learned from each missed or guessed item

A strong review routine turns every correction into a sharper plan for the next New Jersey NJSLA practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** (8.EE.C.7) Distribute: $-2n + 8 = 10$. Subtract 8: $-2n = 2$. Divide by -2 : $n = -1$.
- 2) **Choice C is correct.** (8.EE.B.5) The rise is 3 miles and the run is 4 hours. Slope = $\frac{3}{4}$ miles per hour. This is the constant speed.
- 3) **Choice C is correct.** (8.G.C) Let t = Tom's current age. Sarah's current age is $t + 5$. In 5 years, their ages are $t + 5$ and $t + 10$, so $(t + 5) + (t + 10) = 45$. Then $2t + 15 = 45$, so $t = 15$.
- 4) **Choice B is correct.** (8.NS.A.2) First sock: 8 choices. Second sock: 7 remaining (since it must be different). Total: $8 \times 7 = 56$.
- 5) **Choice A is correct.** (8.G.B.8) Since both points have the same x -coordinate, the distance is simply the difference in y -coordinates: $|9 - 1| = 8$.
- 6) **Choice B is correct.** (8.SP.A.2) A strong negative slope shows a strong inverse association: better efficiency correlates with fewer defects.
- 7) **Choice C is correct.** (8.G.A.4) Volume scales by the cube of the scale factor: $27 \times 2^3 = 27 \times 8 = 216 \text{ cm}^3$.
- 8) **Choice A is correct.** (8.F.A.1) Substitute $x = 10$: $P(10) = 50(10) - 200 = 500 - 200 = 300$. Profit is \$300.
- 9) **The correct answer is An outlier.** (8.SP.A.1) A point that lies far from the main pattern of data is called an outlier. It deserves investigation to understand why it differs from the trend.
- 10) **Choice B is correct.** (8.NS.A.1) Any integer n can be written as $\frac{n}{1}$, so every integer is rational. Choice A is false because square roots of perfect squares, such as $\sqrt{25}$, are rational. Choice C is false because repeating decimals are always rational. Choice D is false because numbers that can be written as a fraction are rational, not irrational.
- 11) **The correct answer is 0.45.** (8.SP.A.4) Joint relative frequency: $\frac{144}{320} = 0.45$.
- 12) **Choice D is correct.** (8.NS.A.1) Let $x = 0.\bar{4}$. Then $10x = 4.\bar{4}$. Subtracting: $10x - x = 4.\bar{4} - 0.\bar{4} = 4$, so $9x = 4$ and $x = \frac{4}{9}$.
- 13) **Choice C is correct.** (8.NS.A.2) $\sqrt{48} = 4\sqrt{3} \approx 4 \times 1.73 = 6.92 \approx 6.9$. Distractor B (7.0) confuses with nearby perfect square $\sqrt{49} = 7$; A and D are unreasonable bounds.
- 14) **Choice D is correct.** (8.EE.A.3) The exponent in 3.2×10^5 is larger (5 vs. 4), so $3.2 \times 10^5 = 320,000$ is greater than $5.1 \times 10^4 = 51,000$.
- 15) **The correct answer is 0.4.** (8.G.B.8) Compute $1.6 - 1.2 = 0.4$.
- 16) **Choice D is correct.** (8.NS.A.2) $7.7^2 = 59.29$ and $7.8^2 = 60.84$. The number 60 is a little closer to 59.29 than to 60.84, so $\sqrt{60} \approx 7.746$ is closer to 7.7 than to 7.8.
- 17) **Choice C is correct.** (8.G.C.9) A rectangular prism has 6 rectangular faces (3 pairs of congruent rectangles). A complete net shows all 6 faces.
- 18) **Choice B is correct.** (8.G.A.1) Reflections preserve angle measures. The reflected triangle has the same angles as the original (rigid transformation).
- 19) **The correct answer is A,E.** (8.EE.A.1) A is true because $(m^5)^2 = m^{10}$. E is true because $(m^2)^5 = m^{10}$. B simplifies to m^9 , C is a sum, and D simplifies to m^8 .
- 20) **Choice A is correct.** (8.EE.B.6) Slope = $\frac{3-0}{0-(-1)} = 3$. When $x = 0$, $y = 3$, so $b = 3$. Thus $y = 3x + 3$.
- 21) **Choice C is correct.** (8.EE.C.7) Divide by -4 (FLIP the inequality): $x < \frac{12}{-4} = -3$.
- 22) **Choice D is correct.** (8.G.B.8) SOLID line and shading BELOW the negatively-sloped line indicate $y \leq -\frac{2}{3}x + 2$.
- 23) **Choice C is correct.** (8.SP.A.3) Substitute $n = 100$: $C = 2(100) + 50 = 200 + 50 = \250 .
- 24) **Choice D is correct.** (8.EE.B.5) Loan X costs \$200 in interest; Loan Y costs \$240. Loan X is cheaper overall.
- 25) **Choice A is correct.** (8.EE.A.2) Check each: A is correct. B: $\sqrt{64} = 8 \neq 7$. C: $\sqrt{100} = 10 \neq 5$. D: $\sqrt[3]{64} = 4 \neq 8$.
- 26) **Choice D is correct.** (8.EE.A.4) Add first: $(9 + 3.6) \times 10^5 = 12.6 \times 10^5 = 1.26 \times 10^6$. Then divide: $\frac{1.26 \times 10^6}{4 \times 10^2} = 0.315 \times 10^4 = 3.15 \times 10^3$.
- 27) **Choice A is correct.** (8.EE.B.5) For $y = 2x$: at $x = 1$, $y = 2(1) = 2$. Only choice A gives the correct point.



The Power of Showing Work

Hi, Organized Solver!

◇ You practiced Grade 8 skills that often require more than one step. That means your written work matters. ◇

★ **Remember this:** Showing work is not extra. It is how you track your thinking, find errors, and prove that your answer did not happen by luck. You practiced across 4 full Grade 8 practice tests, and that repeated effort matters. ★

Organized Work Habits

- **One Line Per Step:** Keep the path readable.
- **Box the Answer:** Make the final result easy to find.
- **Use Labels:** Tell what each value represents.
- **Check the Path:** Follow your steps backward if needed.

Grade 8 test-day tip: When a problem has several steps, write less on each line. Space makes checking easier.

If you want to share something or ask a question, please email me at jay@testinar.com.

Jay Daie

Your Organized-Work Coach

PRACTICE TODAY, ACHIEVE TOMORROW!

Give your child the confidence and skills they need with **4 full-length Grade 8 Math** practice tests that reflect real test formats and cover all key math standards. Perfect for building skills, strengthening problem-solving abilities, and achieving success on test day!

4



WHAT'S INSIDE?



Standards-Aligned Practice

Questions designed to cover essential Grade 8 math standards.



Variety of Question Types

Multiple-choice, short answer, and more to build well-rounded skills.



Real-World Applications

Engaging problems that connect math to everyday life.



Step-by-Step Progress

Track improvement and build confidence with every test.



COVERS ALL ESSENTIAL TOPICS

- ✓ The Number System
- ✓ Expressions & Equations
- ✓ Ratios & Proportional Relationships
- ✓ Linear Equations
- ✓ Functions
- ✓ Geometry
- ✓ Measurement & Data
- ✓ Statistics & Probability
- ✓ Pythagorean Theorem
- ✓ Volume & Surface Area
- ✓ Transformations
- ✓ Inequalities
- ✓ Data Analysis & Graphing
- ✓ And More!



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